

Application Serial No.: 10/720,517
Reply to Office Action dated March 9, 2004

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1, 5-7, 10, 12-19, and 51-56 are presently active in this case, Claims 1, 5, 6, 10, 12, and 16 having been amended by way of the present Amendment. Claims 2-4, 8, 9, 11, and 20-50 have been canceled from the present application without prejudice or disclaimer.

Claims 51-56 were indicated as being allowable on the Office Action Summary. No rejections of these claims were present in the Official Action. Thus, the Applicants submit that Claims 51-56 are in condition for allowance.

In the outstanding Official Action, several informalities were noted in the specification. For example, on page 2 of the Official Action, it was indicated that the specification must include a cross-reference to the parent case under the continuing data portion thereof. The Applicants traverse this assertion. The Applicants note that an Application Data Sheet was submitted on November 25, 2003, which included the relevant data for the parent application. Furthermore, the Applicants note that 37 CFR §§1.76(b)(5) and 1.77(b)(2) indicate that the submission of this information in an application data sheet satisfies the requirement regarding the cross-reference to related applications. Accordingly, the Applicants submit that this requirement has been satisfied. Regarding the editorial changes suggested on pages 3-4 of the Official Action, the Applicants submit that the present Amendment includes amendments to the specification that correct these informalities.

Application Serial No.: 10/720,517
Reply to Office Action dated March 9, 2004

Claims 1, 5-7, 10, and 12-19 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 has been amended to delete the phrase “the no more than five valves per vessel,” which was rejected in the Official Action. The Applicants submit that the claims are definite under 35 U.S.C. 112, second paragraph. Accordingly, the Applicants request the withdrawal of the indefiniteness rejection.

Claims 12-15 and 19 were indicated as being allowable if rewritten to overcome the indefiniteness rejection and if rewritten in independent form including all of the limitations of the base claim and any intervening claims. As noted above, the Applicants submit that the indefiniteness rejection has been overcome. Claim 12 has been rewritten in independent form including all of the limitations of base Claim 1, and therefore the Applicants submit that Claim 12 and Claims 13-15 that depend there from are in condition for allowance.

Additionally, the Applicants note that Claim 7 was not rejected based upon prior art in the outstanding Official, and thus the Applicants submit that Claim 7 contains allowable subject matter.

Claims 1, 5, 10, and 16-18 were rejected under 35 U.S.C. 102(b) as being anticipated by Ji et al. (U.S. Patent No. 6,017,382). Claim 6 were rejected under 35 U.S.C. 103(a) as being unpatentable over Ji et al. in view of Esselink (U.S. Patent No. 6,579,346). For the reasons discussed below, the Applicants request the withdrawal of the anticipation rejection of Claim 1 and traverse the rejections of newly independent Claims 5 and 16.

In the Office Action, the Ji et al. reference is indicated as anticipating each of

independent Claims 1, 5, and 16. However, the Applicants note that a claim is anticipated only if each and every element as set forth in the claims is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). As will be demonstrated below, the Ji et al. reference clearly does not meet each and every limitation of the independent Claims 1, 5, and 16.

Claim 1 recites a pressure swing adsorption process comprising, among other steps, the steps of providing an equalization conduit that connects each vessel of a plurality of vessels, providing a first valve that fluidly connects the equalization conduit to a first vessel of the plurality of vessels and does not prevent flow along the equalization conduit to any remaining vessels of the plurality of vessels, and providing a second valve that fluidly connects the equalization conduit to the first vessel of the plurality of vessels and does not prevent flow along the equalization conduit to any remaining vessels of the plurality of vessels. The Applicants submit that the Ji et al. reference does not disclose a process in which a first valve and a second valve are provided that fluidly connect the equalization conduit to a first vessel, as recited in Claim 1.

The Ji et al. reference describes a method of processing semiconductor manufacturing exhaust gases. The Official Action cites the conduit connected to valves 76, 82, 88, and 94 as the equalization conduit of Claim 1 of the present application. The Applicants note that the conduit connected to valves 76, 82, 88, and 94 is not also connected to any of the beds 10, 12, 14, and 16 by a second valve. In other words, the Ji et al. reference does not disclose an

equalization conduit that is connected to a bed by a first valve and a second valve. The configuration of the present invention provides significant advantages. (See paragraph 0032 of the present application for non-limiting embodiments thereof and examples of advantages of those embodiments.) Accordingly, the Applicants submit that the Ji et al. reference does not anticipate Claim 1, since the Ji et al. reference does not disclose all of the limitations recited in Claim 1. Claim 10 is believed to be allowable for at least the reasons discussed above with respect to Claim 1, from which it depends.

Claim 16 has been rewritten in independent form. Claim 16 recites a pressure swing adsorption process comprising, among other steps, the steps of providing an equalization conduit that connects each vessel of a plurality of vessels, where the plurality of vessels each have a second opening connected to the equalization conduit via a first valve and a fifth valve. As discussed above with respect to Claim 1, the Ji et al. reference does not disclose an equalization conduit that is connected to a bed by a first valve and an additional valve. Accordingly, the Applicants submit that the Ji et al. reference does not anticipate Claim 16, since the Ji et al. reference does not disclose all of the limitations recited in Claim 16. Claims 17 and 18 are believed to be allowable for at least the reasons discussed above with respect to Claim 16, from which they depend.

Claim 5 has been rewritten in independent form. Claim 5 recites a pressure swing adsorption process comprising, among other steps, the steps of separating a gas mixture by absorbing at least one gas component in adsorbent beds provided within the plurality of vessels, wherein the separating step has at least a three-stage pressure equalization. The

Applicants respectfully submit that the Ji et al. reference does not disclose a process in which a separating step has at least a three-stage pressure equalization, as recited in Claim 5.

The Ji et al. reference describes a process that is set forth in the chart in column 5. The process described in the Ji et al. reference includes a two stage equalization step in which pressure is decreased and a two stage equalization step in which pressure is increased. For example, the chart sets forth for bed (10) a first stage equalization step in which pressure is decreased that includes steps 4 and 5 where pressure is decreased in bed (10) and increased in bed (14), and a second stage equalization step in which pressure is decreased that includes step 6 where pressure is decreased in bed (10) and increased in bed (16). The Applicants submit that, while the first stage is separated into two different “steps” in the chart, steps 4 and 5 represent a single equalization stage for bed (10). The first stage for bed (10) is separated into two different “steps” due to the fact that during this time period the bed (16) is performing first an equalization step and then a venting step. However, the fact that the first equalization stage for bed (10) is separated into two different “steps” in the chart does not change the fact that these steps represent a single stage of equalization between bed (10) and bed (14).

Accordingly, the Applicants respectfully submit that the Ji et al. reference does not disclose a process in which a separating step has at least a three-stage pressure equalization, as recited in Claim 5. Thus, the Ji et al. reference does not anticipate Claim 5, since the Ji et al. reference does not disclose all of the limitations recited in Claim 5.

Claim 6 is believed to be allowable for at least the reasons discussed above with

Application Serial No.: 10/720,517
Reply to Office Action dated March 9, 2004

respect to Claim 5, from which it depends. Furthermore, regarding the rejection of Claim 6, the Applicants submit that the Esselink reference does not provide an enabling disclosure of the process described therein. For example, the Applicants submit that it is not feasible to trace the cited pressure histories using the process diagrams provided.

Accordingly, the Applicants respectfully request the withdrawal of the art rejections.

Consequently, in view of the above discussion, it is respectfully submitted that the present application is in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully Submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



J. Derek Mason
Registration No. 35,270
Attorney of Record

Christopher D. Ward
Registration No. 41,367

Customer Number

22850

Tel. (703) 413-3000
Fax. (703) 413-2220
(OSMMN 10/01)

JDM:CDW:brf

I:\atty\cdw\H2Gen\244508US23 CONT\am1.doc